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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,414	04/15/2005	Ronny Losfeld	016782-0324	7979
22428 7590 09/07/2007 FOLEY AND LARDNER LLP SUITE 500 3000 K STREET NW WASHINGTON, DC 20007			EXAMINER SAVAGE, JASON L	
			ART UNIT 1775	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/531,414

Applicant(s)

LOSFELD ET AL

Examiner

Jason L. Savage

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on 6-18-07.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-4, 6, 8-12 and 14-16 are rejected under 35 U.S.C. 103(a) as obvious over Morimoto (US 4,729,871) in view of Vaughn et al. (US 5,133,864)

Morimoto teaches forming a composite structure such as a filter which may comprise a plurality of porous layers superposed and sintered together (col. 4, ln. 21-31). Morimoto further teaches that at least one of the layers comprises short metal fibers (col. 3, ln. 8-34). Regarding the limitation in claim 1 that a second layer is a self-supporting layer of sintered shot metal fibers, the claims are drawn to an article, not the method of making. The layer of Morimoto which is superposed with at least another layer which is subsequently sintered would result in the layer comprising short fibers which is sintered and thus as self-supporting as the second layer claimed by Applicant.

Morimoto is silent to the limitation that the first porous metal layer comprise a non-woven metal fiber fleece comprising long metal fibers. However, Vaughn teaches filters having fibrous layers provided in a wide variety of forms including metal nets, windings, porous sheets, non-woven mats etc (col. 3, ln. 53-68), It would have been obvious to one of ordinary skill in the art at the time of the invention to modified the composite filter by substituting other porous layers such as non-woven mats as described by Vaughn for the metal net of Morimoto with a reasonable expectation of success. Regarding the limitation that the non-woven fibrous layer be a fiber fleece, it would have been within the purview of one of ordinary skill to have selected any type of

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non-woven material including fleeces. Absent a teaching of the criticality or showing of unexpected results from the first layer being a non-woven metal fiber fleece, it would not provide a patentable distinction over the prior art.

Regarding claim 2, although Morimoto is silent to the maximum roughness depth as defined by the  $R_t$  value such as is described on p.4, lines 4-7 of the specification from Priority Document PCT/EP03/50691, such a maximum roughness depth would have been inherent due to the use of the short fibers such as those claimed by Applicant. The Patent and Trademark Office can require Applicant to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on Applicants where rejection based on inherency under 35 U.S.C. § 102 or on prima facie obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 U.S.P.Q. 431 (CCPA 1977).

In the alternative, it would have been obvious to one of ordinary skill in the art at the time of the invention to have employed the use of fibers having fine dimensions that would ensure that the surface profile of the layer is uniform and contains little to no roughness depth so as to maintain the integrity, strength, uniformity and porosity of the formed layer.

Regarding claim 3, the short fibers in the layer of Morimoto would meet the limitation of being randomly oriented.

Regarding claim 4, although Morimoto does not teach that a first layer comprising a non-woven metal fiber fleece is sintered before the first and second layers are sintered together, the claims are drawn to an article, not the method of making. The claimed sintered composite of Morimoto as modified by Vaughn would not materially differ from the structure claimed by Applicant which subjects the first layer to two sintering steps.

Regarding claims 6 and 9-10, Morimoto teaches that the layers may comprise metal particulate (col. 3, ln. 35-43). Regarding the limitation that long fibers or metal particulate are added in the amount claimed, it would have been within the purview of one of ordinary skill in the art to have added a sufficient amount of the particulate to achieve the desired improvements of the layer properties.

Regarding claim 8, it would have been within the purview of one of ordinary skill in the art to have recognized that additional layers could be provided for the filter including reinforcing structures such as a metal net.

Regarding claim 9, Morimoto teaches that the layers may comprise metal particulate (col. 3, ln. 35-43).

Regarding claims 11 and 12, Morimoto teaches the porosity of the formed layers may be between 60-80% (col. 7, ln. 1-9).

Regarding claims 14-15, Morimoto is silent to the use of the composite filter as a surface filtration medium or for filtration of liquids or gases. However, these are merely

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intended uses. Statements of intended use are not considered patentably distinguishing limitations. See Ex parte Masham 2 U.S.P.Q.2d 1647, 1648. In re Thuau 135 F.2d 344, 47 U.S.P.Q. 324. Application of Hack, 245 F.2d.246, 114 U.S.P.Q. 161.

Regarding claim 16, Morimoto teaches that the short fibers may have a length of 1-20mm and diameter of 20-100 microns giving a L/D range of 10-1000. which encompasses the range of 30-100 claimed by Applicant. Regarding the long fiber L/D, one would expect the long fibers to have lengths substantially larger than the short fibers which would result in a L/D range greater than that for the short fibers.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morimoto (US 4,729,871) in view of Vaughn et al. (US 5,133,864) as applied to claims 1-4, 6, 8-12 and 14-16 above, further in view of Nakagawa et al. (US 4,703,898).

The references teach what is set forth above but are silent to the first layer comprising a mixture of short metal fibers and long metal fibers such as is claimed.

Nakagawa teaches a method of forming sets of short metal fibers (col. 4, ln. 57-64). Nakagawa further teaches that the mixing short metal fibers with other materials such as longer fibers can exhibit advantageous properties such as a more uniform dispersion of materials, enhanced formability, excellent twisting with other fibers to form networked structures having good strength despite having large porosities, and improved sinterability (col. 5, ln. 35-61). It would have been obvious to one of ordinary skill in the art at the time of the invention to have added a mixture of short metal fibers to the non-woven metal fiber web to provide advantageous properties for the filter.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morimoto (US 4,729,871) in view of Webber (GB 1,190,844)..

Morimoto teaches a method of forming a layered filter structure comprising a porous metal net layer and providing a second layer comprising a layer of short metal fibers wherein the layers are in contact with each other and sintered to form the layered filter. However, Morimoto does not teach that the second layer is a self-supporting layer.

Webber teaches a porous metal web structure which may comprise multiple layers of porous fiber containing material (p. 2, ln. 33-55), Webber further teaches that the fibers are formed into sheets and then laminated to form the multilayer structure (p. 4, ln. 41-55). The teaching that the layers are formed into sheets is considered a teaching of the layer being a self-supporting structure. Although Webber is silent to the layer being sintered, it would have been within the purview of one of ordinary skill in the art at the time of the invention to have recognized that the formed sheet layers could be sintered with a reasonable expectation of success of being suitable for use in forming the multilayer composite filter. Absent a teaching of the criticality or showing of unexpected results from the layered filter structure being joined in the claimed sequence, it would not provide a patentable distinction over the prior art.

***Prior Art Made of Record***

The following is a listing of prior art made of record that is also considered pertinent to the present Application:

GB'583 (GB 889,583) teaches that the use of short fibers having fine dimensions is extremely important in order to ensure the surface profile of the layer is uniform and contains little to no voids. The lack of voids serves so as to maintain the integrity, strength, uniformity and porosity of the formed layer (p. 3, ln. 9-43).

Nakagawa et al (US 4,703,898) teaches a method of forming sets of short metal fibers (col. 4, ln. 57-64). Nakagawa further teaches that the mixing short metal fibers with other materials such as longer fibers can exhibit advantageous properties such as a more uniform dispersion of materials, enhanced formability, excellent twisting with other fibers to form networked structures having good strength despite having large porosities, and improved sinterability (col. 5, ln. 35-61).

***Response to Arguments***

Applicant's arguments with respect to claims 1-4 and 6-16 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argues that Morimoto does not teach or describe a non-woven metal fiber fleece comprising long metal fibers. However Vaughn teaches filters may comprise a variety of fibrous material layers including metal nets and non-woven metal fiber mats. It would have been obvious to one of ordinary skill in the art to have

modified the filter of Morimoto by substituting other porous layers such as non-woven mats as described by Vaughn with a reasonable expectation of success.

Applicant further argues that the invention of claim 1 is fundamentally different from Morimoto stating the layer comprising the short metal fibers is a self-supporting layer. As was stated in the rejections above, with the exception of claim 13, the claims are drawn to an article and not the method of making. Furthermore, it is known and would have been obvious to have provided fibrous layers as self-supporting layers when forming a laminated filter structure.

Regarding claim 2, Applicant argues that the PTO has not provided any evidence that the teachings of Morimoto necessarily have the recited maximum roughness depth. However, the specification recites the short metal fibers which meet the length overlap the length over diameter ratio for the short metal fibers described on page 2 of the specification and now in claim 16. Since Morimoto uses the same short fibers as those claimed by Applicant, one would expect the  $R_t$  value to be within the range claimed. The Patent and Trademark Office can require Applicant to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on Applicants where rejection based on inherency under 35 U.S.C. § 102 or on prima facie obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 U.S.P.Q. 431 (CCPA 1977).

Regarding the argument as to the obviousness of the claim limitation, GB'583 teaches that the integrity, strength, uniformity and porosity of a layer containing short fibers can be controlled by ensuring the surface profile of the layer is uniform and contains little to no voids (p. 3, ln. 9-43). The maximum roughness depth as defined by Applicant on page 4 of the specification appears to be directly correlated to the variation found in the surface profile of the layer. Therefore, one seeking to enhance the uniformity of the surface profile would inevitably minimize the maximum roughness depth.

Regarding claim 13, Applicant argues that Morimoto does not teach the claimed combination of steps. This argument is not persuasive in view of the new grounds of rejection of Morimoto in view of Webber.

Regarding the arguments to claims 10 and newly added claim 16, the arguments are not persuasive in view of the new grounds of rejection set forth in the rejections above,

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason L. Savage whose telephone number is 571-272-1542. The examiner can normally be reached on M-F 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Jason Savage  
8-30-07



JENNIFER C. MCNEIL  
SUPERVISORY PATENT EXAMINER

9/4/07